

Transport GT28

B2935



Service Engineer's Manual

PREFACE

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Version 1.0

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(Declaration of Conformity Procedure) DoC FCC Part 15:
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Operation is subject to the following conditions:

- 1) This device may not cause harmful interference, and
- 2) This device must accept any interference received including interference that may cause undesired operation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and the receiver.
 - Plug the equipment into an outlet on a circuit different from that of the receiver.

Consult the dealer on an experienced radio/television technician for help.

Notice for Canada

This apparatus complies with the Class B limits for radio interference as specified in the Canadian Department of Communications Radio Interference Regulations. (Cet appareil est conforme aux normes de Classe B d'interférence radio tel que spécifié par le Ministère Canadien des Communications dans les règlements d'interférence radio.)



Notice for Europe (CE Mark) This product is in conformity with the Council Directive 89/336/EEC, 92/31/EEC (EMC).

CAUTION: Lithium battery included with this board. Do not puncture, mutilate, or dispose of battery in fire. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by manufacturer. Dispose of used battery according to manufacturer instructions and in accordance with your local regulations.

About this Manual

This manual provides you with instructions on installing your Transport GT28, and consists of the following sections:

- Chapter 1:** Provides an introduction to the Transport GT28 barebones, packing list, describes the external components, gives a table of key components, and provides block diagrams of the system.
- Chapter 2:** Covers procedures on installing the CPU, memory modules, an optional PCI card, and hard drives.
- Chapter 3:** Covers removal and replacement procedures for pre-installed components.
- Appendix:** Provides information on installing SMDC cards and describes the differences between mainboard BIOS and system BIOS. The cable connection tables are also provided for reference of system setup.

Conventions

The following conventions are used in the manual:

Note: Calls attention to important information.



Warning: Provides information to prevent harm to user or damage to equipment.

SAFETY INFORMATION

Before installing and using the Transport GT28, take note of the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Do not block the slots and opening on the unit, which are provided for ventilation.
- Only use the power source indicated on the marking label. If you are not sure, contact the Power Company.
- The unit uses a three-wire ground cable, which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
- Do not place anything on the power cord. Place the power cord where it will not be in the way of foot traffic.
- Follow all warnings and cautions in this manual and on the unit case.
- Do not push objects in the ventilation slots as they may touch high voltage components and result in shock and damage to the components.
- When replacing parts, ensure that you use parts specified by the manufacturer.
- When service or repairs have been done, perform routine safety checks to verify that the system is operating correctly.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- Cover the unit when not in use.

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Chapter 1: Overview

1.1 About the TYAN Transport GT28 B2935

Congratulations on your purchase of the TYAN Transport™ GT28 (B2935), a highly-optimized rack-mountable barebone system. The TYAN Transport™ GT28 (B2935) is designed to support AMD Opteron™ 2000 series processors, which are built on AMD's new Socket 1207, providing a rich feature set and incredible performance. Leveraging advanced technology from AMD, the TYAN Transport™ GT28 (B2935) server system is capable of offering a seamless upgrade path to quad-core performance and leading-edge solutions to help run your business applications. The TYAN Transport™ GT28 (B2935) not only empowers your company in today's demanding IT environment but also offers a smooth path for future application usage.

TYAN is also proud to deliver the Transport GT28 (B2935) in SATA flavor while supporting up to four (4) hot-swap hard drives. The Transport GT28 (B2935) uses TYAN's latest tooling-made chassis featuring a robust structure, tool-less and modularized design, and a solid mechanical enclosure. All of this provides the Transport GT28 (B2935) the power and flexibility to meet the needs of nearly any server application.



Model No.	HDD Bay	Backplane	Motherboard
B2935G28V4H	4 HDDs Removable	4-port SATA/SAS	S2935G4NR
B2935G28V4HI (BTO)	4 HDDs Removable	4-port SATA/SAS	S2935G4NRI

1.2 Features

Enclosure

- Industry 19" rack-mountable 1U chassis
- Dimension:
D 29.2 x W 17.2 x H 1.72 inch
(741.6x436x43.6mm)
- Two nodes in one chassis

Processors (Per node)

- Dual 1207-pin ZIF L1 sockets
- Supports up to two AMD Opteron™ 2000/2300 series processors
- Supports 1.33/ 1.06GHz FSB

Chipset (Per node)

- nVIDIA nForce Pro 3600
- SMSC DME5017
- SMSC 6D103
- Mellanox InfiniHost III Lx DDR MT25204A0-FCC-D single port (optional)

Memory (Per node)

- Sixteen (16) 240-pin DDRII DIMMs
- Supports up to 64GB Registered DDRII-667/533/400 DIMMs

Expansion Slots (Per node)

- One (1) x 8 PCI-E with riser (pre-installed)
- One (1) SO-DIMM connector for IPMI 2.0 W/ KVM over IP (Optional)

Back I/O Ports (Per node)

- One (1) 9-pin UART serial port
- One (1) 15-pin VGA port
- Two (2) USB 2.0 ports
- Four (4) RJ45 10/100/1000 Base-T port w/ activity LED
- One (1) RJ45 connector for OPMA
- One (1) InfiniBand connector (optional)

Front Panel Features (Per node)

- I/O
 - (2) USB 2.0 ports
 - LED indicators
 - Power LED
 - (1) LAN LED
 - (1) Infiniband LED

- HDD Activity LED
- ID LED
- Warning LED
- Switches
 - Power
 - Reset
 - ID
 - NMI

Storage (Per node)

- Serial ATA II Host controllers embedded
- Supports two serial ports running at 3.0 GB/s.
- NV RAID 0, 1 support

Networking (Per node)

- Four (4) 10/100/1000 Base-T LAN ports from Intel® “Ophir” (82571EB) Gigabit Ethernet Controller

Video (Per node)

- XGI Volari Z9s
- 16MB frame buffer memory

Drive Bay (Per node)

- Supports (2) 3.5" SATA Hot-swap drive bays

Motherboard

- B2935G28V4H
 - (2) TYAN Thunder n3600W 2935G4NR
- B2935G28V4HI (BTO)
 - (2) TYAN Thunder n3600W 2935G4NRI

BIOS

- AMI BIOS 8Mbit Flash
- Supports ACPI 2.0
- PnP, DMI2.0, WfM2.0 power management

Server Management

- Automatic fan speed control
- Supports Tyan Server Management (TSM)
- Optional TYAN SMDC M3295-2/ M3296, IPMI v2.0 compliant remote server management kit

Server Cooling

- (6) 40*40*56mm 15000rpm heavy-duty fans with fan speed monitor/control
- (2) 40*40*28mm 15000rpm heavy-duty fans with fan speed monitor/control
- (4) Passive CPU heatsinks

Power Supply

- High efficiency (80+) EPS 12V, 1U, 1000W with PFC for two (2) nodes
- 100V~240V AC input

Regulatory

- FCC Class A (Declaration of Conformity)
- CE (Declaration of Conformity)

Environment Temperature

- Operating temperature 5°C~35°C
- Non-operating temperature -40°C~70°C

1.3 Unpacking

This section describes the GT28 (B2935) package contents and accessories. Open the box carefully and ensure that all components are present and undamaged.

1.3.1 Box Contents

Component	Description
	Industry standard 1U chassis, (4) Hot-swap HDD bays
	TYAN S2935 (Thunder n3600W) motherboard (pre-installed)
	M1228 SAS/SATA backplane (pre-installed)
	M2088-R PCI-E x 8 riser card (pre-installed)
	M1003 LED and USB control board (pre-installed)
	EPS 12V 1000W High efficiency (80+) PSU (pre-installed)
A B 	A (2) 40mm x 40mm x 28mm fans B (6) 40mm x 40mm x 56mm fans

1.3.2 Accessories

If any items are missing or appear damaged, contact your retailer or browse to TYAN's Web site for service:
<http://www.tyan.com>.

The Web site also provides information on other TYAN products, plus FAQs, compatibility lists, BIOS settings, and more.



1 x Tyan driver CD



Power Cords
Left to right: Europe, US



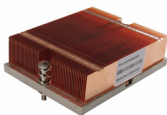
HDD Screws



Mounting Ears & Screws



Barebone Manual &
Mainboard Manual



4 x CPU Heatsinks

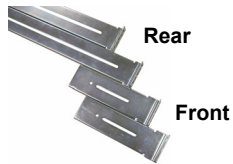


TYAN Logo

Rail Kit



Mounting Brackets x 4



Sliding Brackets
Front L-Bracket x 2
Rear L-Bracket x 2



Screws Kit

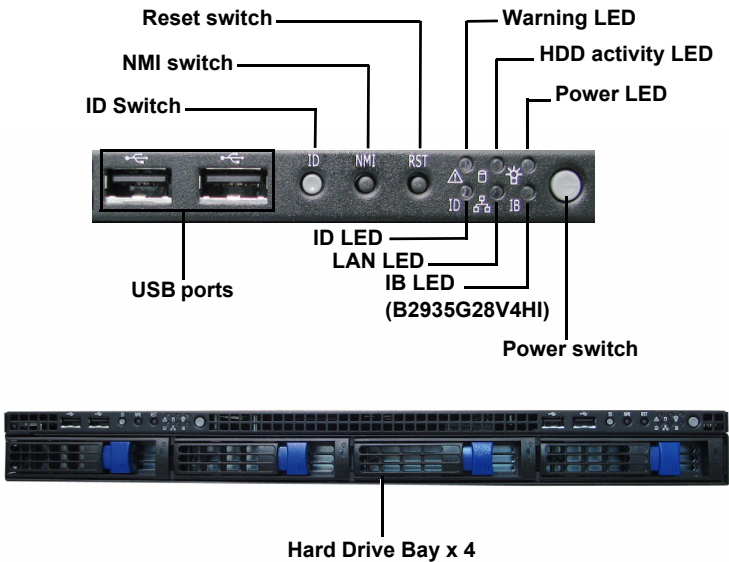


Sliding Rails x 2

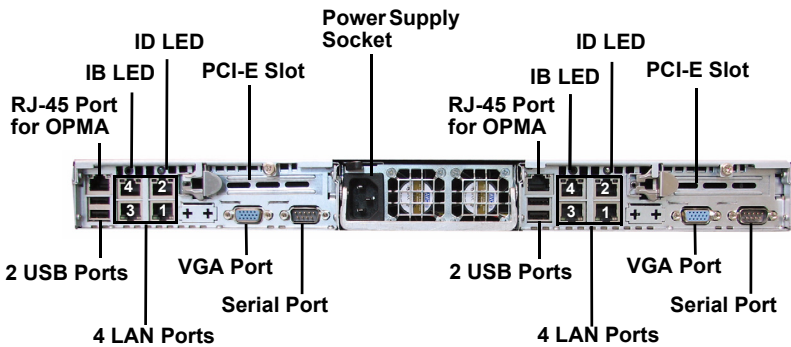
1.4 About the Product

This section contains the hardware diagrams and a block diagram of the GT28 system.

1.4.1 System Front View



1.4.2 System Rear View



1.4.3 LED Definition

Front Panel

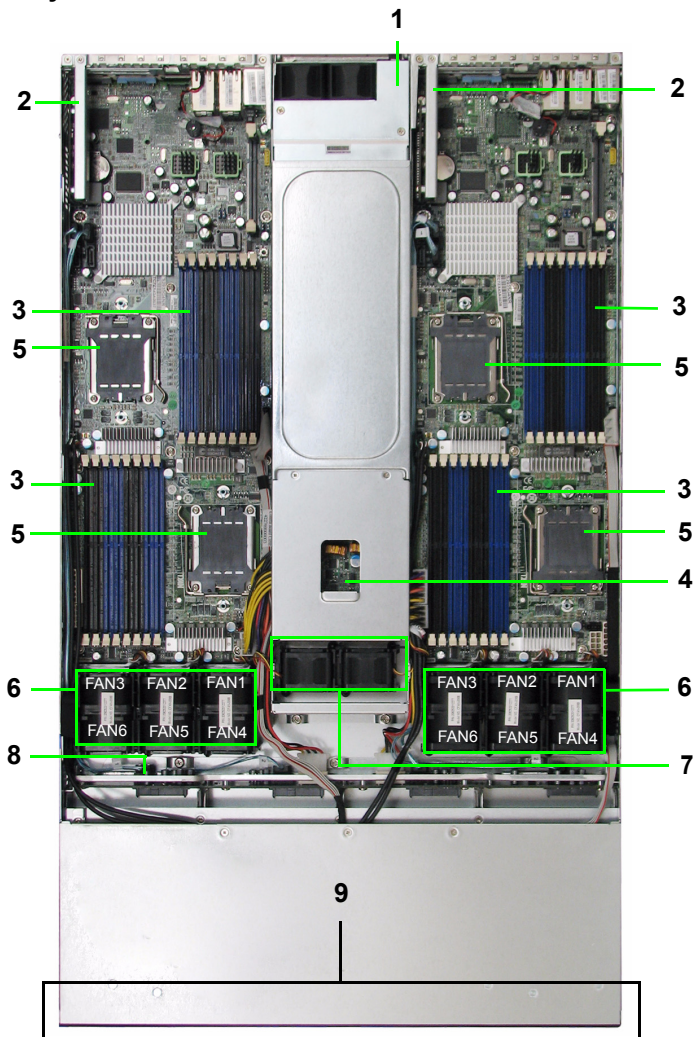
LED	Color	State	Description
Power	Green OFF	ON OFF	Power ON Power OFF
HDD Activity	Amber OFF	Random Blinking OFF	HDD access activity No disk activity
ID LED	Blue OFF	ON OFF	System is identified System is not identified
IB LED (B2935G28V4HI)	Amber Amber OFF	ON Blinking OFF	Infiniband linked Infiniband accessing No infiniband linked
LAN Activity	Green Green OFF	ON Blinking OFF	LAN linked LAN accessing No LAN linked
Warning	Red OFF	ON OFF	Fan fails Normal
Hot Swappable HDD Fail LED	Amber OFF	ON OFF	HDD fails Normal
Hot Swappable HDD Access LED	Green Green OFF	ON Random Blinking OFF	HDD ready HDD access activity HDD not ready

Rear I/O LED

*Right or Left is viewed from the rear.

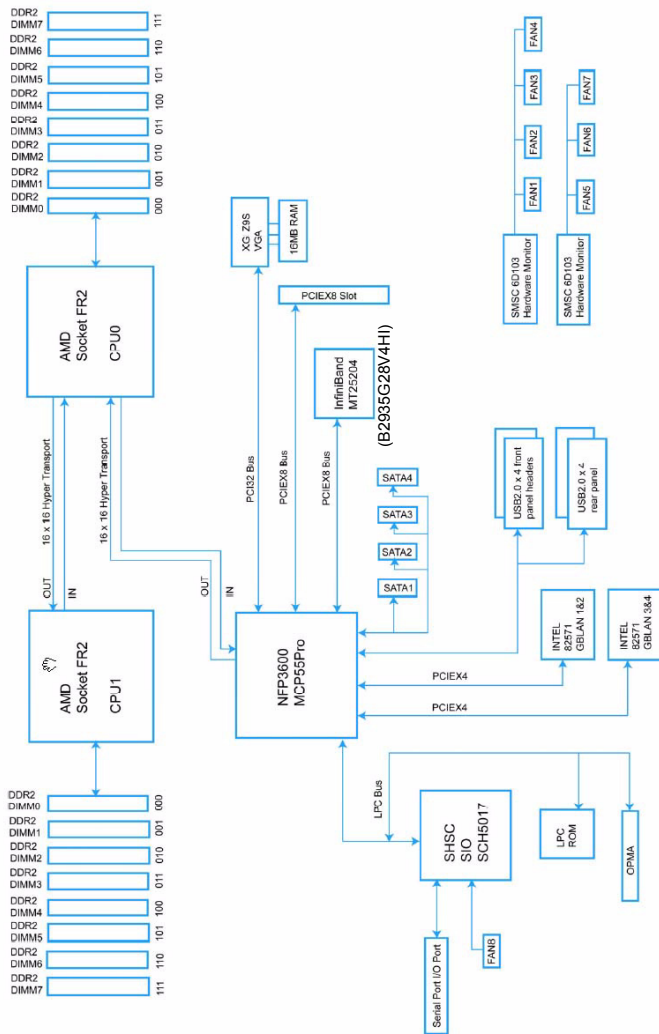
LED	Color	State	Description
RJ45 NIC1/NIC2/NIC3/NIC4 Linkage (Left Side)	Green Green OFF	ON Blinking OFF	LAN linked LAN accessing No LAN linked
RJ45 NIC1/NIC2/NIC3/NIC4 Mode (Right Side)	Amber Green OFF	ON ON OFF	Gigabit mode 100Mb mode 10Mb mode
ID LED	Blue OFF	ON OFF	System is identified System is not identified
IB LED (B2935G28V4HI)	Green Green OFF	ON Blinking OFF	Infiniband linked Infiniband accessing No infiniband linked

1.4.4 System Internal View

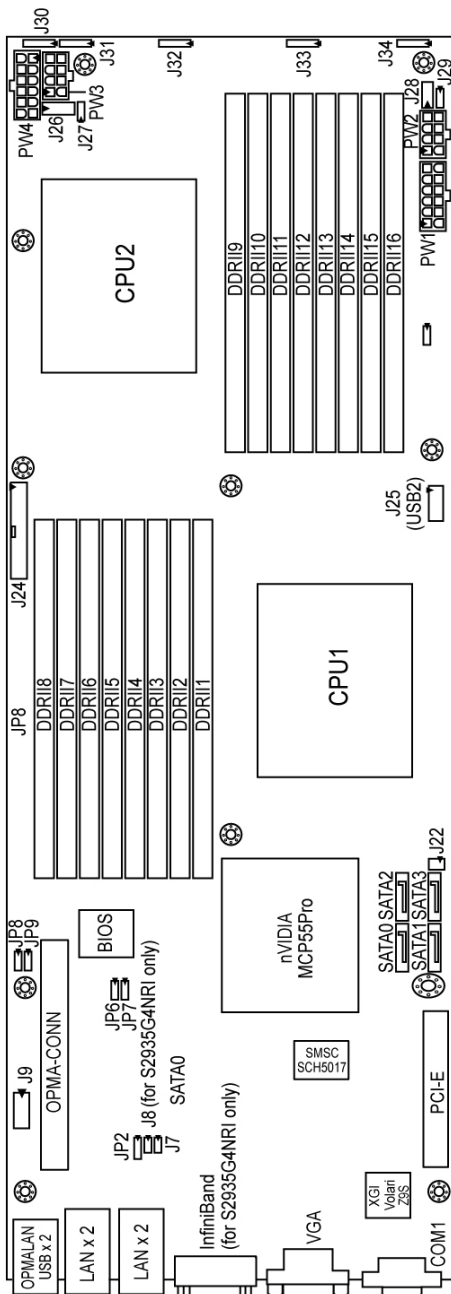


- | | |
|-------------------------------------|-----------------------|
| 1. EPS 12V Power Supply | 5. CPU Socket |
| 2. PCI-E x 8 Slot (with riser card) | 6. System Fans |
| 3. Memory Slots | 7. PSU Fans |
| 4. Power Board (M1028) | 8. SAS/SATA Backplane |
| | 9. Four SAS/SATA HDDs |

1.4.5 GT28 (B2935) System Block Diagram



1.4.6 S2935 Board Parts, Jumpers, and Connectors



Jumpers and Connectors

Jumper /Connector	Function
J7	ID LED Header
J8	IB LED Header
J9	IPMB Pin Header
J22	LCM Pin Header
J24	Barebone Front Panel Pin Header
J25 (USB2)	USB Front Panel Connector
J26/J28	4-pin Power Supply SMBUS Header
J27/J29	3-pin Power Supply Signal Header
J30/J31/J32 /J33/J34	8-pin Fan Connectors with Speed Control
PW1/PW4	12-pin Power Supply Connector
PW2/PW3	8-pin Power Supply Connector
JP2	Clear CMOS Jumper - Pin 1-2 closed: Normal (Default) - Pin 2-3 closed: Clear
JP6/JP7	LAN Enable/Disable Jumper - Pin 1-2 closed: Enable (Default) - Pin 2-3 closed: Disable
JP8	OPMA Function Jumper - Pin 1-2 closed: LAN SMBDAT to OPMA Side-band SDA (Default) - Pin 2-3 closed: LAN SMBDAT to South Bridge
JP9	OPMA Function Jumper - Pin 1-2 closed: LAN SMBCLK to OPMA Side-band SCLK (Default) - Pin 2-3 closed: LAN SMBCLK to South Bridge

J24 Barebone Front Panel Pin Header

Pin	Signal	Pin	Signal
1	HDLED+	2	HDLED-
3	RESET+	4	RESET-
5	PWRLED+	6	PWRLED-
7	WARNLED+	8	WARNLED-
9	SDA	10	SCL
11	NMI+	12	NMI-
13	PWRSW+	14	PWRSW-
15	PWRSW+	16	PWRSW-
17	FPLAN_LED+	18	FPLAN_LED-
19	FPIB_LED+	20	FPIB_LED-
21	NC	22	NC
23	IDLED+	24	IDLED-
25	IDLEDBTN+	26	IDLEDBTN-
27	KEY	28	NC

Power Supply

Power connector: 12-pin (PW1/PW4)

Pin	Signal	Pin	Signal
1	5VSB	7	GND1
2	+5V1	8	+5V2
3	GND2	9	GND3
4	+3V1	10	+3V2
5	GND4	11	GND5
6	+12V3	12	GND6

Power connector: 8-pin (PW2/PW3)

Pin	Signal	Pin	Signal
1	GND1	5	GND3
2	GND2	6	GND4
3	+12V	7	+12V
4	+12V	8	+12V

Chapter 2: Setting Up

2.0.1 Before You Begin

This chapter explains how to install the CPU, CPU heatsink, memory modules, and hard drives. Instructions on inserting a PCI card are also given.

Take note of the precautions mentioned in this section when installing your system.

2.0.2 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers prevents them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

2.0.3 Tools

The following procedures require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

2.0.4 Precautions

Components and electronic circuit boards can be damaged by discharges of static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Transport GT28 or injury to yourself.

- Ground yourself properly before removing the top cover of the system. Unplug the power from the power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

2.1 Rack Mounting

After installing the necessary components, the Transport GT28 can be mounted in a rack using the supplied rack mounting kit.

Rack mounting kit

Sliding Rails x 2

Sliding Brackets x 4 (Front x 2, Rear x 2)

Mounting Ears x 2

Screws Kit x 1

Mounting Brackets x 4

2.1.1 Installing the Server in a Rack

Follow these instructions to mount the Transport GT28 into an industry standard 19" rack.

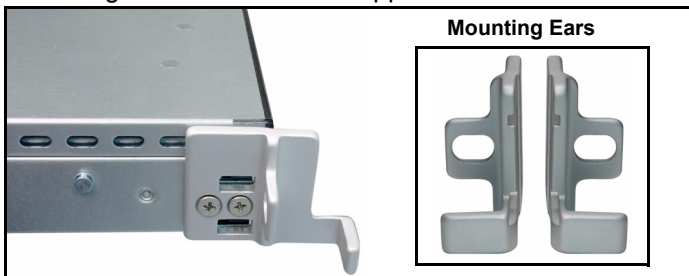
NOTE: Before mounting the Transport GT28 in a rack, ensure that all internal components have been installed and that the unit has been fully tested.

Screws List

Item	Screw	Size	Quantity
A		M4-4L	18
B		M5-8L	10
C		M5-15L	4

Installing the Inner Rails to Chassis

1. Screw the mounting ear to each side of Transport GT28 as shown using 2 screws from the supplied screws kit.



2. Draw out the inner rails from rail assembly. Install inner rails to left and right sides of chassis using 2 M4-4L(A) screws for each side.

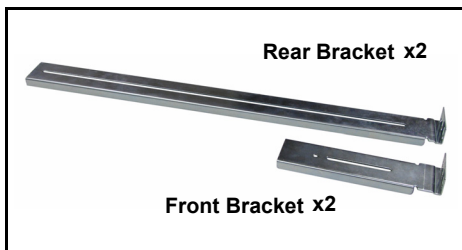


Installing Outer Rails to the Rack

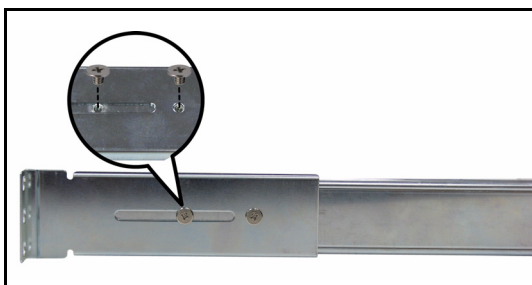
3. Measure the distance between inner side of the front and rear mounting brackets in the rack.



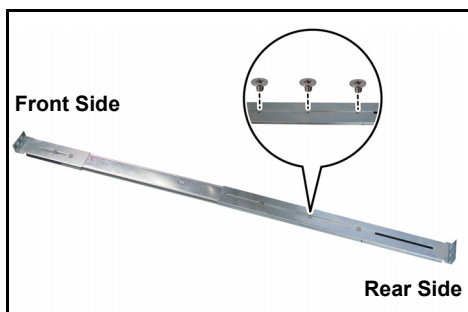
4. Locate the front and rear brackets.



5. Reserve 40mm on the front bracket. Secure the front bracket to outer rail with 2 M4-4L(A) screws.



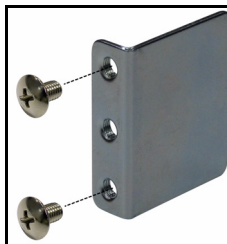
6. Reserve the distance same as in Step 2 on rear bracket. Secure the rear bracket to outer rail with 3 M4-4L(A) screws.



7. Secure the outer rail to the rack using 2 brackets and 4 M5-8L(B) screws for each side. Secure the mounting brackets from inside, not outside, of the rack.

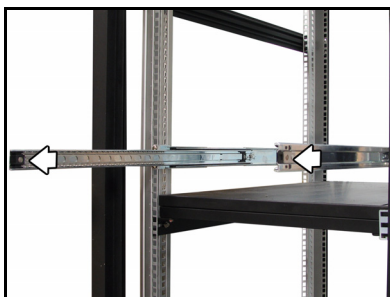


Mounting Bracket

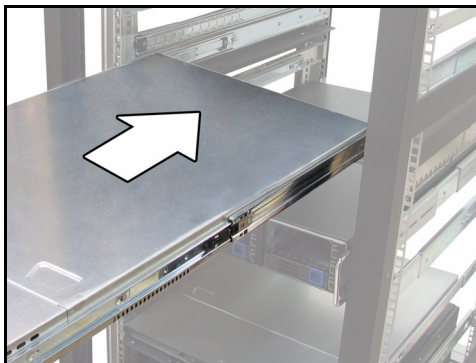


Rackmounting the Server

8. Draw out the middle rail to the latch position.

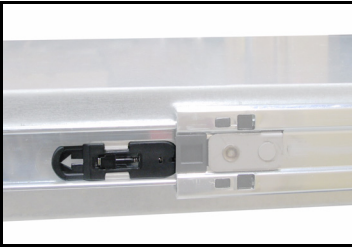


9. Lift the chassis and then insert the inner slide rails into the middle rails.

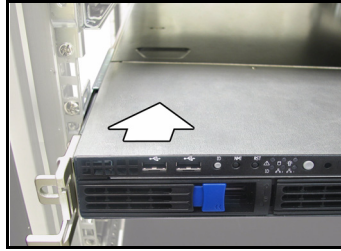


10. Press the latch (A) to push the whole system into the rack (B).

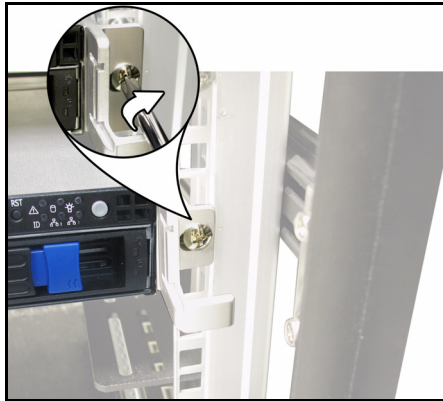
A



B



11. Secure the mounting ears of chassis to the rack with 2 M5-15L(C) screws.



NOTE: To avoid injury, it is strongly recommended that two people lift the Transport GT28 into the place while a third person screws it to the rack.

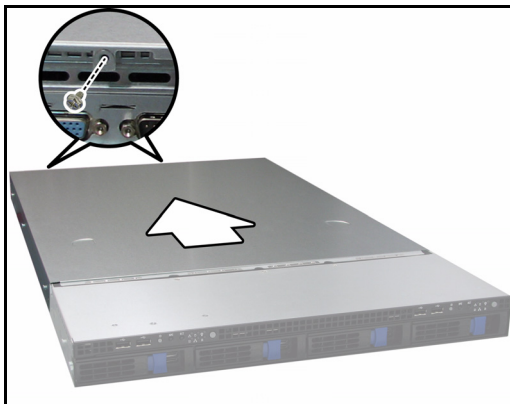
2.2 Installing Motherboard Components

This section describes how to install components on to the motherboard, including CPU, memory modules and PCI card.

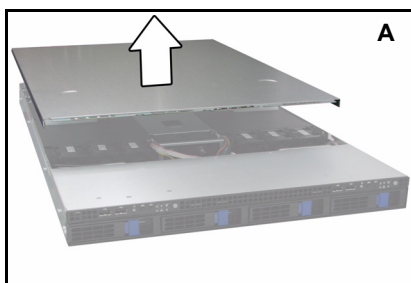
2.2.1 Removing the Chassis Cover

Follow these instructions to remove the Transport GT28 chassis cover.

1. Release the screw on the back side. Then slide the chassis cover in the direction of arrow.



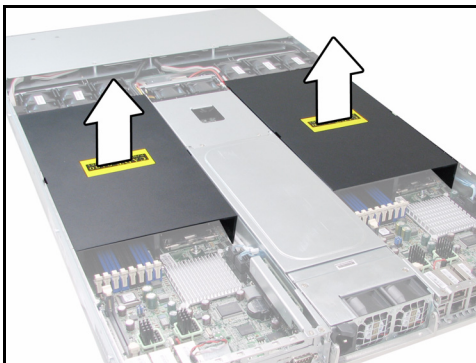
2. Lift the cover off.



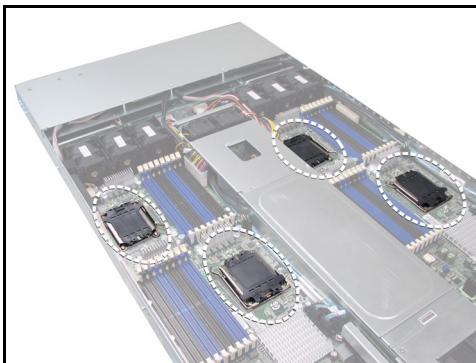
2.2.2 Installing the CPU and Heatsink

Follow these instructions to install the CPU and CPU heatsink.

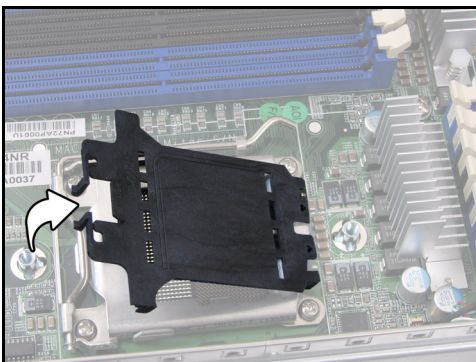
1. Lift up the air ducts as shown.



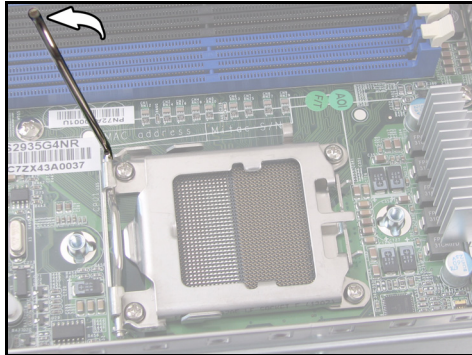
2. Locate the CPU sockets.



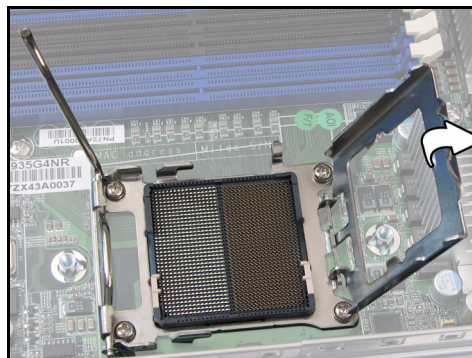
3. Take off the CPU protection cap.



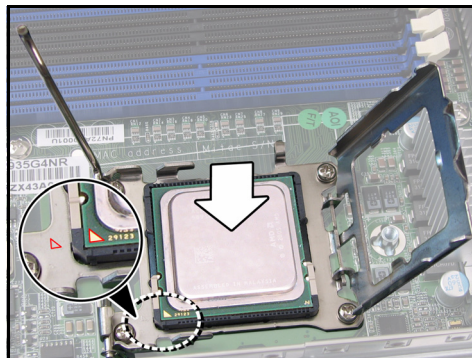
4. Pull the CPU lever up to unlock the CPU socket.



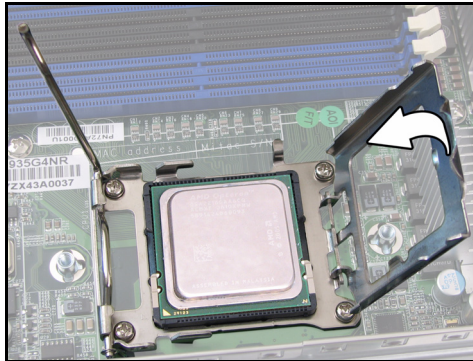
5. Open the socket in the direction as shown.



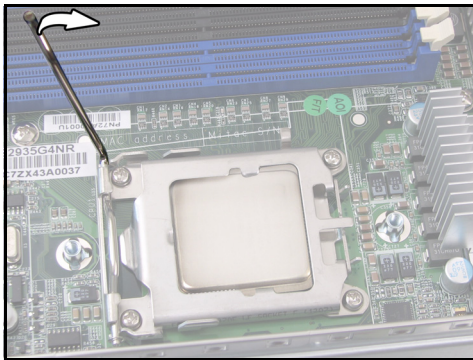
6. Place the CPU in the CPU socket, ensuring that pin 1 is located as shown below.



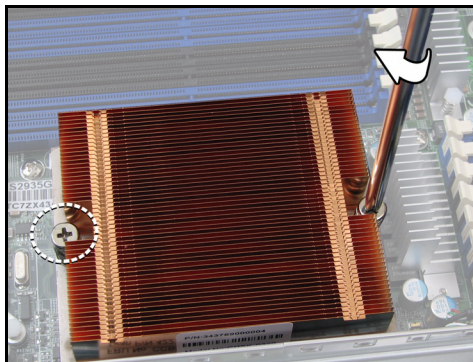
7. Close the socket in the direction as shown.



8. Press the CPU socket lever down to secure the CPU.



9. Place the heatsink on top of the CPU and screw into place as shown.



10. Repeat the same procedures to install CPU and heatsink for the other CPU socket if necessary.

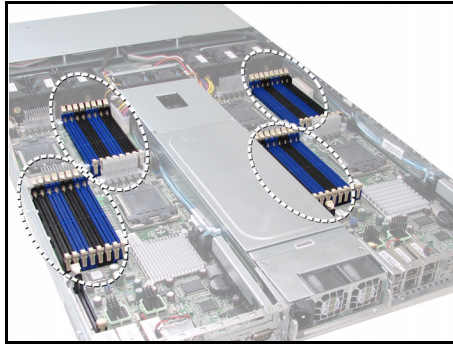
2.2.3 Installing the Memory

Follow these instructions to install the memory modules on the motherboard.

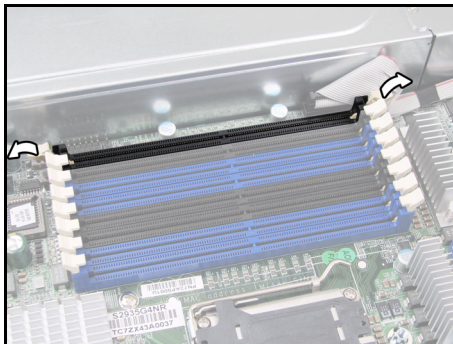
Key points to note before installing memory:

- Only DDRII-667/533/400 memory modules are supported.
- All installed memory will automatically be detected and no jumpers or settings need to be changed.
- The Thunder n3600W S2935 supports up to 64GB of registered ECC memory.
- All memory must be of the same type and density.

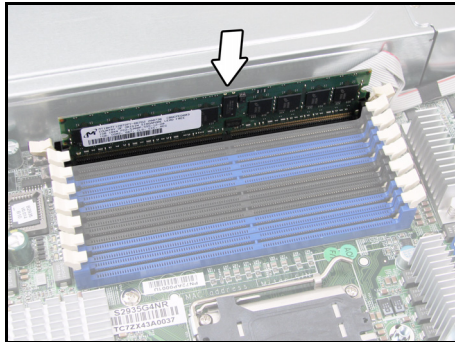
1. Locate the memory slots on the motherboard.



2. Press the memory slot locking levers in the direction of the arrows as shown in the following illustration.



3. Align the memory module with the slot. The module has indentations that align with notches in the slots.
4. Insert the memory module into the slot as shown.



5. When inserted properly, the memory slot locking levers lock automatically onto the indentations at the ends of the module.
6. Repeat the same procedures to install memory for the other memory slots if necessary.

Attention When Installing the Memory!

For optimal dual channel DDRII operation, always install memory **in pairs** beginning with DDRII1 and DDRII2. Mismatched memory may cause system instability.

Refer to the following table for supported DDRII populations.

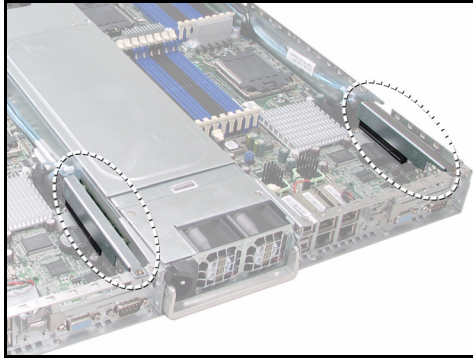
(Note: X indicates a populated DIMM slot)

Population Option	Single CPU Installed (CPU1 only)				Dual CPU installed (CPU1 and CPU2)			
	1	2	3	4	5	6	7	8
DDRII1				X				X
DDRII2				X				X
DDRII3			X	X			X	X
DDRII4			X	X			X	X
DDRII5		X	X	X		X	X	X
DDRII6		X	X	X		X	X	X
DDRII7	X	X	X	X	X	X	X	X
DDRII8	X	X	X	X	X	X	X	X
DDRII9								X
DDRII10								X
DDRII11							X	X
DDRII12							X	X
DDRII13						X	X	X
DDRII14						X	X	X
DDRII15					X	X	X	X
DDRII16					X	X	X	X

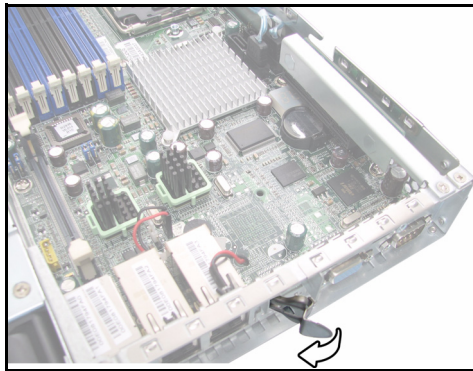
2.2.4 Installing a PCI-E Low Profile Card

The TYAN Transport GT28 (B2935) has two PCI-E Low Profile card slots with pre-installed risers. Follow these instructions for the PCI-E Low Profile card installation in your system.

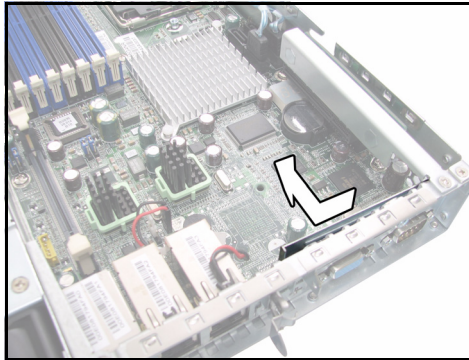
1. Locate the pre-installed PCI-E riser brackets.



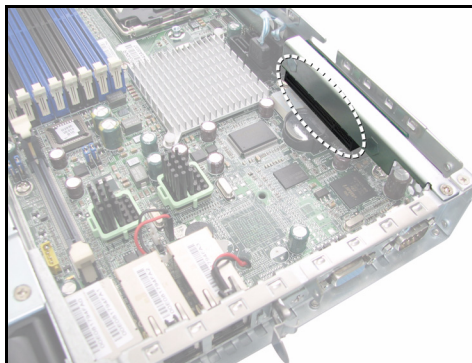
2. Push the tab of PCI-E slot on the rear panel in the direction as shown to release the I/O shield.



3. Move the I/O shield to left as shown and then take off the I/O shield.



4. Locate the PCI-E slot on the riser, and insert a PCI-E Low Profile card into the slot.



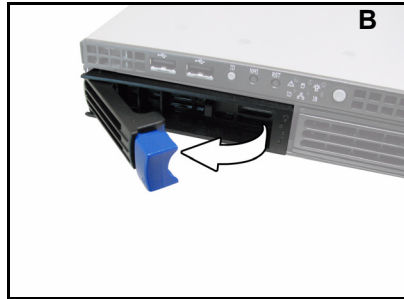
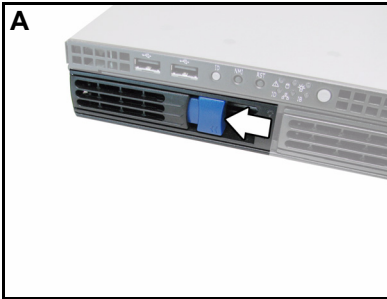
5. Push the tab of PCI-E slot on the rear panel in the direction as shown to fix the PCI-E Low Profile card.
6. Repeat the same procedures to install the PCI-E Low Profile card for the other PCI-E riser if necessary.

2.3 Installing the Hard Drive for GT28 (B2935)

The TYAN Transport GT28 barebone system supports SAS/SATA hard drives.

Follow these instructions to install a SAS/SATA hard drive for GT28 (B2935).

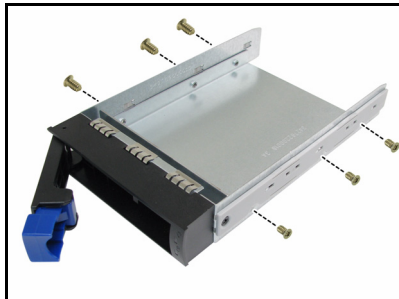
1. Press the locking lever latch in the direction of arrow (A) and then pull the locking lever open (B).



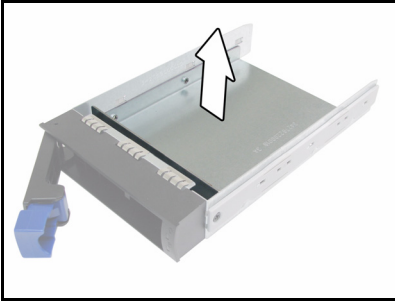
2. Slide the drive tray out.



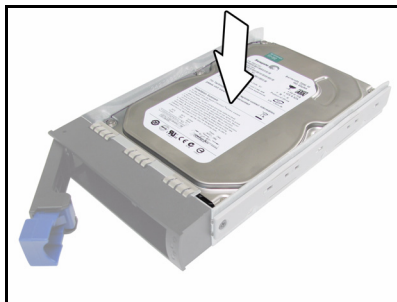
3. Remove the six HDD screws as shown.



4. Remove the drive tray holder.



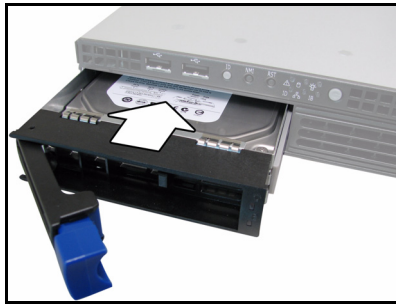
5. Place a hard drive into the drive tray.



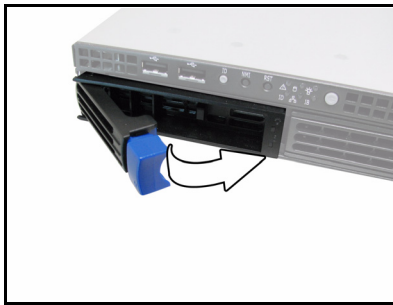
6. Use six HDD screws to secure the HDD.



7. Reinsert the drive tray into the chassis, ensuring that the drive tray is completely inserted into the chassis.



8. Close the locking lever to secure the hard drive tray.



9. Repeat the same procedures to install the hard drive for the other drive tray if necessary.

Chapter 3: Replacing Pre-Installed Components

3.1 Introduction

This chapter explains how to replace pre-installed components including the motherboard, LED control board, SAS/SATA back-plane, and power supply.

Take note of the precautions in this section when installing your system.

3.1.1 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers keeps them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

3.1.2 Tools

The procedures that follow require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

3.1.3 Precautions

Components and electronic circuit boards can be damaged by static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Transport GT28 or injury to yourself.

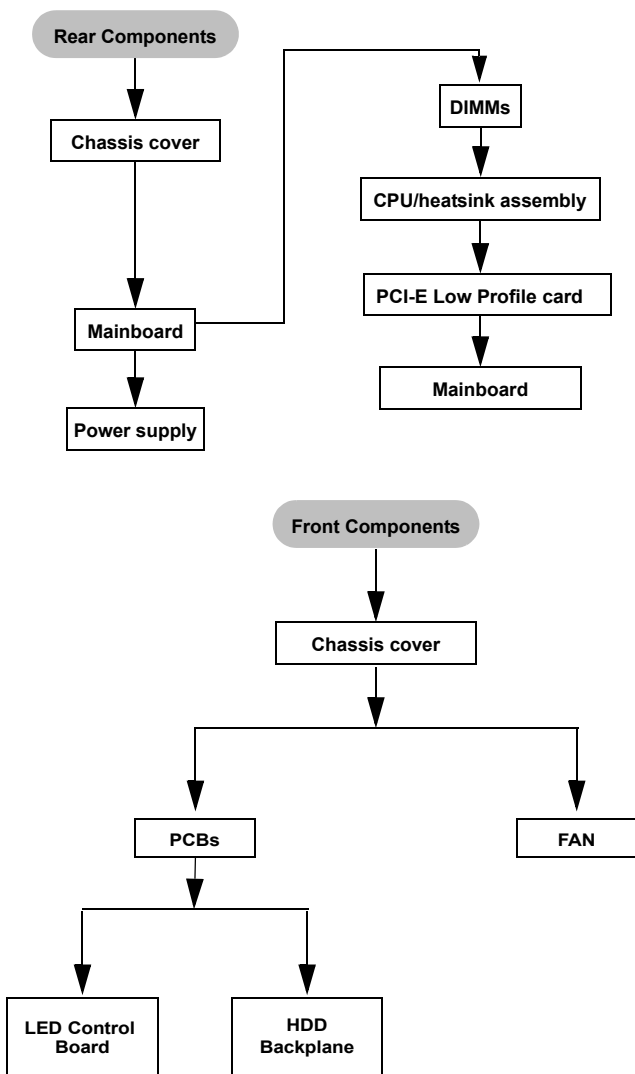
- Ground yourself properly before removing the top cover of the system. Unplug the power from your computer power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

3.2 Disassembly Flowchart

The following flowchart outlines the disassembly procedure.

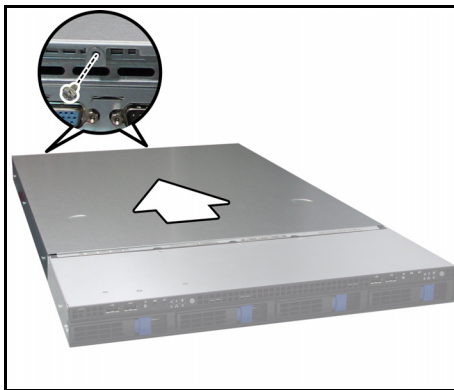


3.3 Removing the Cover

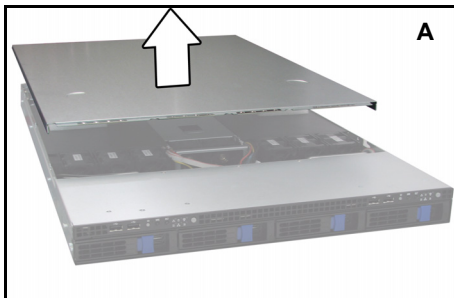
Before replacing any parts you must remove the chassis cover.

Follow these instructions to remove the cover of the Transport GT28 chassis cover.

1. Release the screw on the back side. Then slide the chassis cover in the direction of arrow.



2. Lift the cover off.



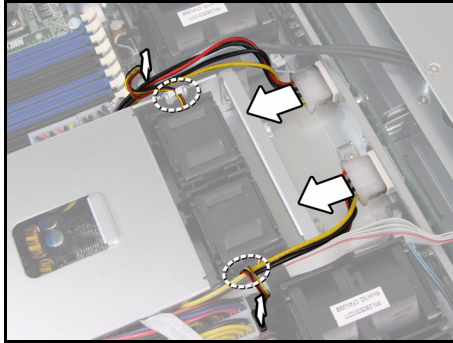
3.4 Replacing Motherboard Components

Follow these instructions to replace motherboard components, including the motherboard.

3.4.1 Disconnecting All Motherboard Cables

Before replacing the motherboard or certain components, remove cables connected to the motherboard. Follow these instructions to remove all motherboard cabling.

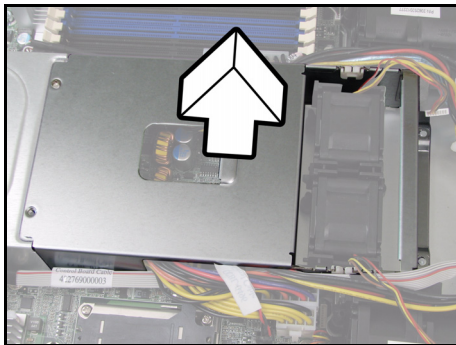
1. Disconnect the power and fan connectors as shown.



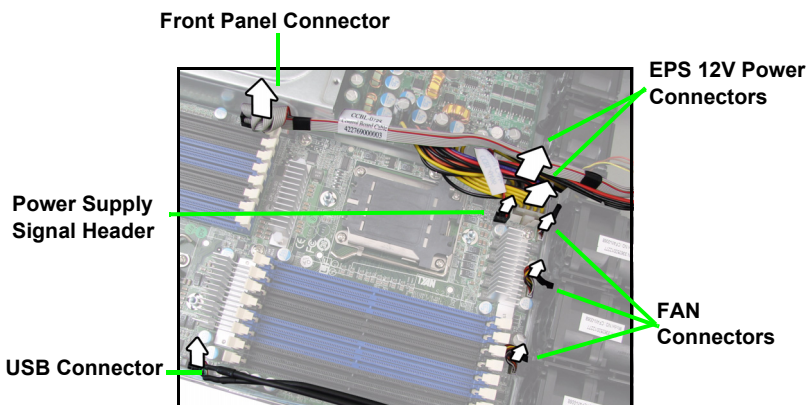
2. Remove the four screws securing the power board cover to the chassis as shown.



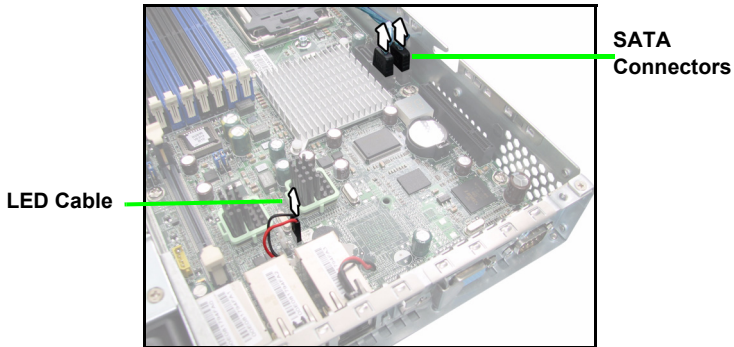
3. Lift up the power board cover as shown.



4. Disconnect the power connectors, front panel connector, power supply signal header, USB connector, and fan connectors.



5. Disconnect the SATA connectors and LED cable. Refer to the mainboard layout for the locations.



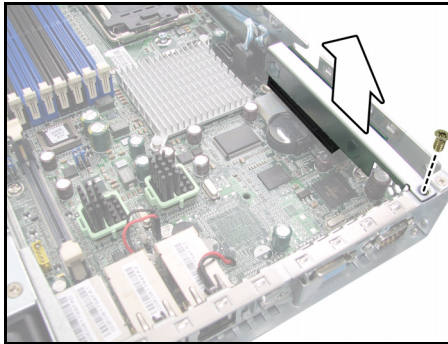
6. Repeat the same steps to disconnect all cables from the other motherboard if necessary.

3.4.2 Removing the Motherboard

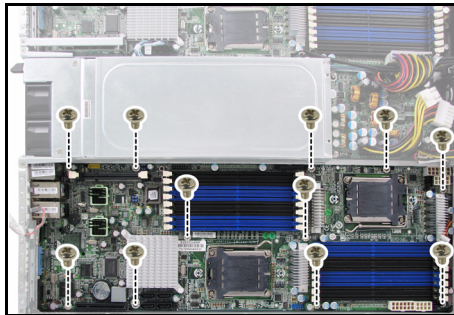
After removing all the cables from the motherboard, follow these instructions to remove the motherboard from the chassis.

Notes: Before removing the motherboard, make sure that all the components installed on the motherboard have been removed.

1. Remove the screw securing PCI-E riser bracket to the chassis.



2. Remove all the screws securing each motherboard to the chassis.

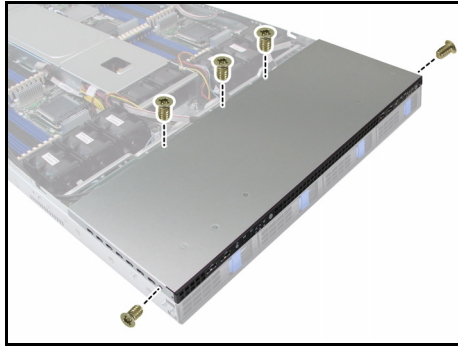


3. Repeat the same steps to remove the other motherboard if necessary.

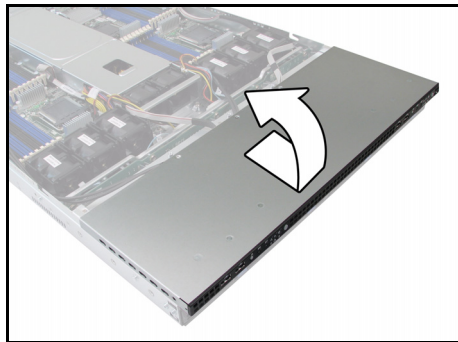
3.5 Replacing the LED Control Board

Follow these instructions to replace the LED control board.

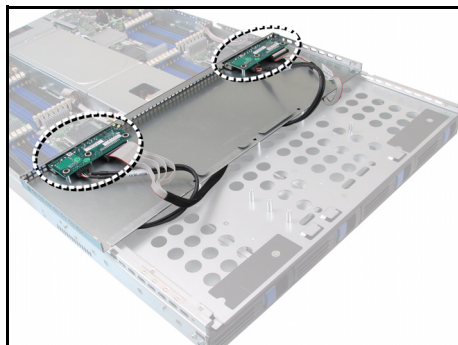
1. Remove the five screws securing the front chassis cover.



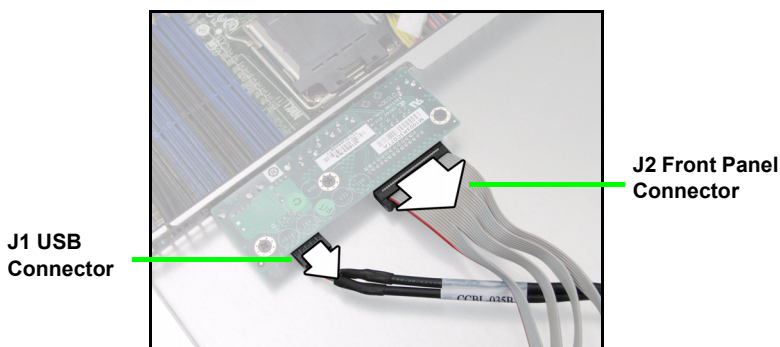
2. Turn over the front chassis cover in the direction of arrow.



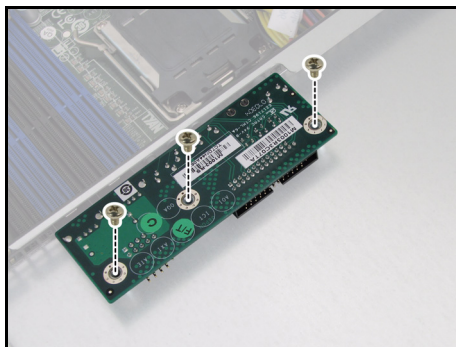
3. Locate the two LED control boards on the front chassis cover.



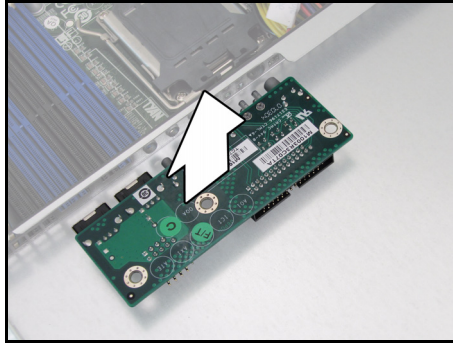
4. Unplug the USB cable and the ribbon cable from their respective connectors.



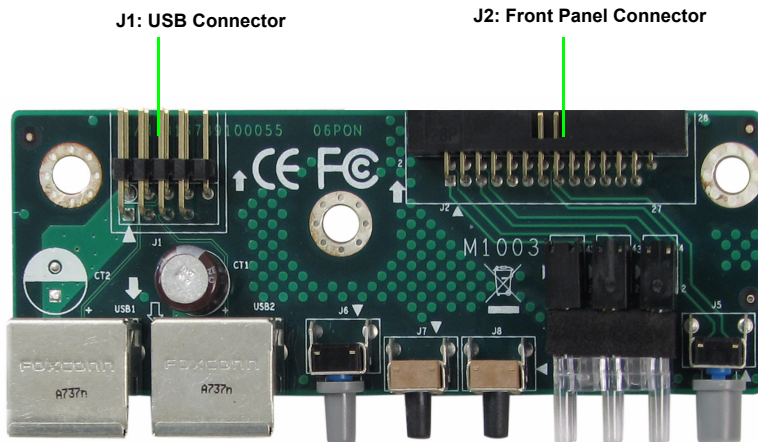
5. Remove the three screws securing the LED control board to the front chassis cover.



6. Lift the LED control board free from the front cover chassis. After replacement, insert the unit to the front cover chassis following the above procedures in reverse.



3.5.1 M1003 LED Control Board Features



3.5.2 M1003 LED Control Board Connector Pin Definition

J1 USB Connector

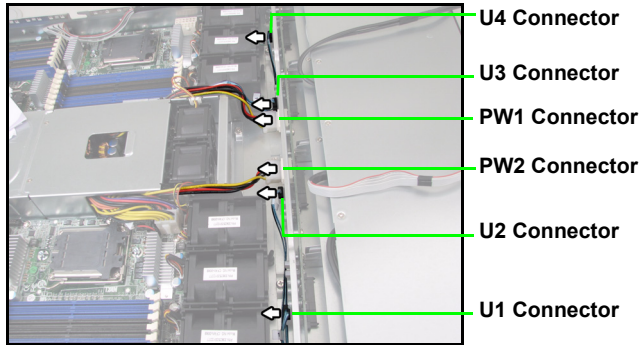
1	VCC5	2	VCC5
3	USB1-	4	USB0-
5	USB1+	6	USB0+
7	GND	8	GND
9	KEY PIN	10	NC

J2 Front Panel Connector

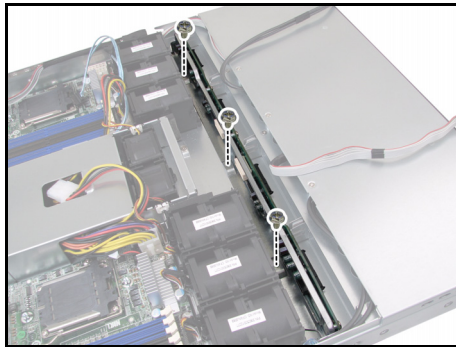
1	HDLED+	2	HDLED-
3	RESET+	4	RESET-
5	PW_LED+	6	PW_LED-
7	WLED+	8	WLED -
9	ICH_SMBDAT	10	ICH_SMBCLK
11	NMI+	12	VOLTAGE5
13	PWRSW+	14	PWRSW-
15	PWR_SW+	16	PWR_SW-
17	LAN1_LED+	18	LAN1_LED -
19	FPIB_LED+	20	FPIB_LED-
21	NC	22	NC
23	ID_LED+	24	ID_LED-
25	IDLEDBTN+	26	IDLEDBTN-
27	KEY PIN	28	NC

3.6 Replacing the SAS/SATA Backplane

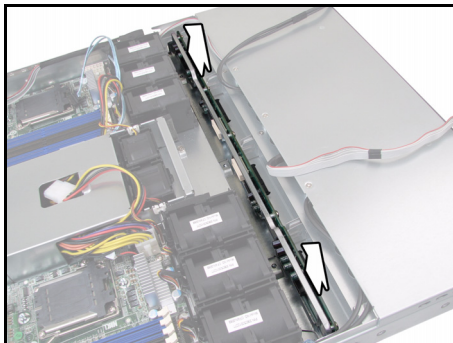
1. Remove all the connected cables from the SAS/SATA backplane.



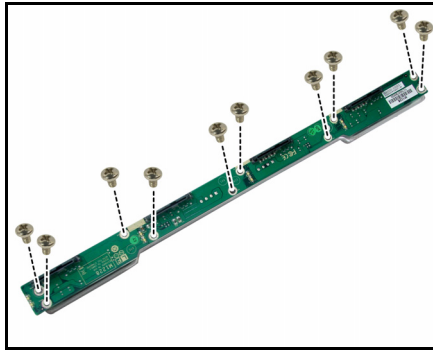
2. Remove the three screws securing the SAS/SATA backplane to the chassis.



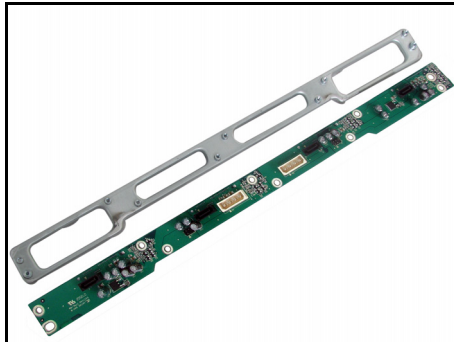
3. Grab the two labels to lift the SAS/SATA backplane off.



4. Remove the ten screws that secure the bracket to the SAS/SATA backplane

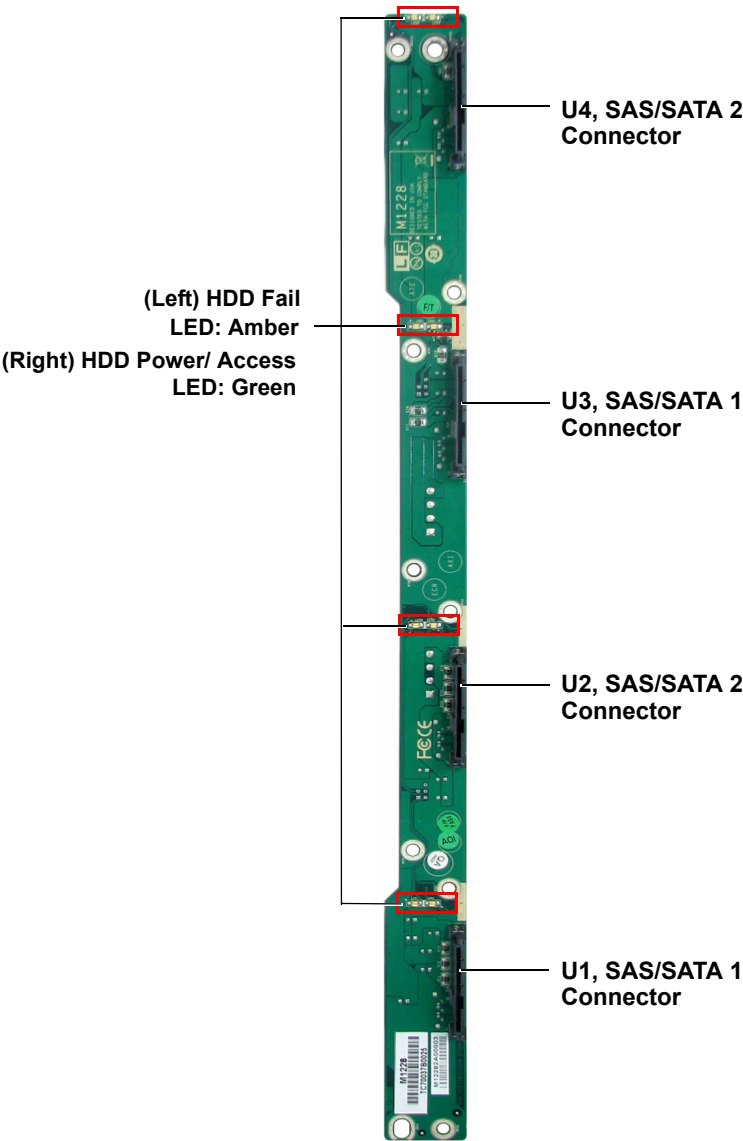


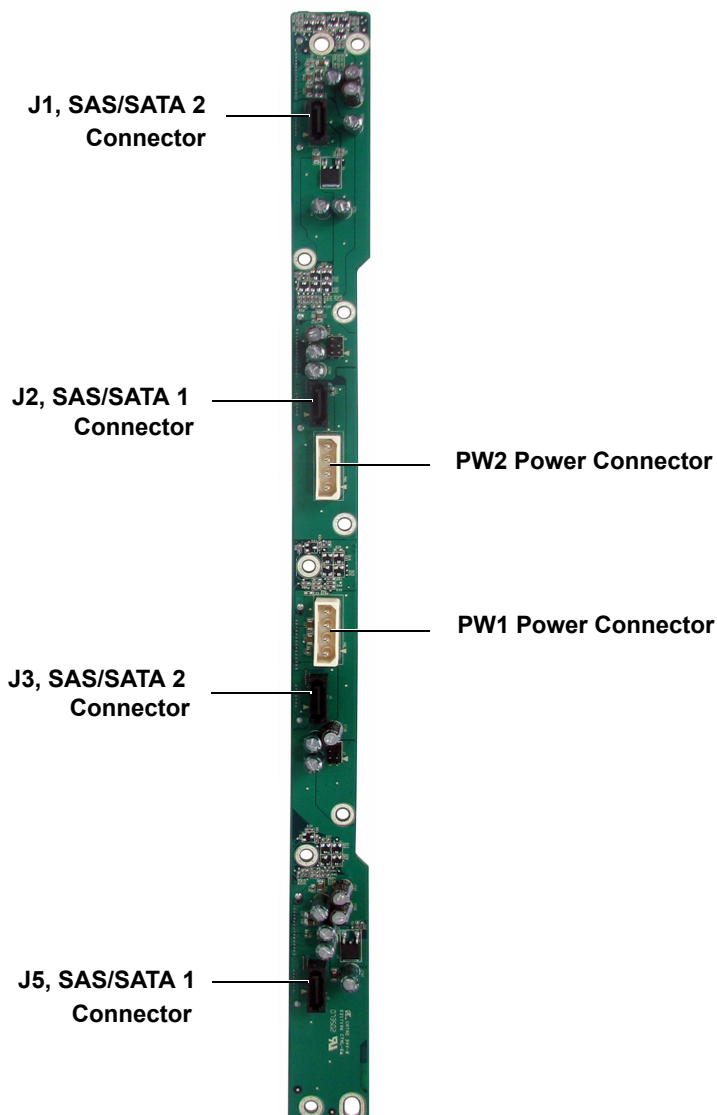
5. Release the SAS/SATA backplane free from the bracket.



6. Replace the unit to the chassis following the above procedures in reverse.

3.6.1 SAS/SATA Backplane (M1228) Features



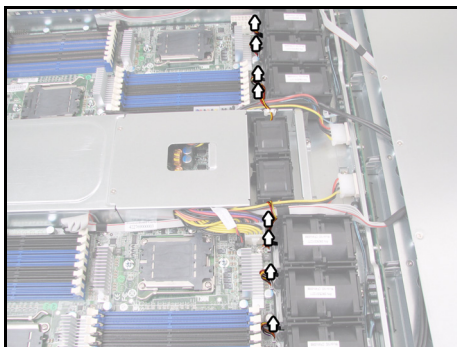


3.7 Replacing the Cooling Fans

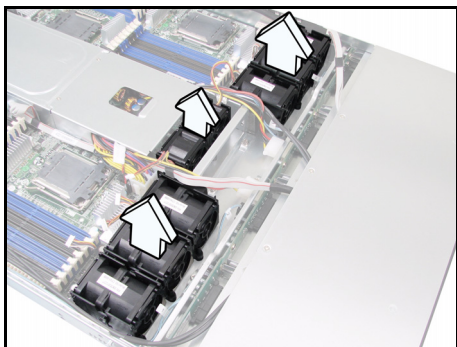
Warning: To avoid danger, keep fingers and other body parts away from the system fan blades.

Follow these instructions to replace the cooling fans in your GT28 (B2935) system.

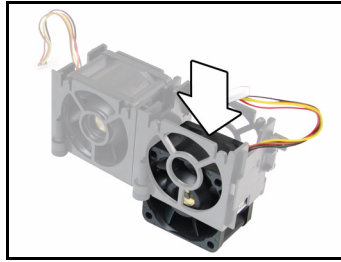
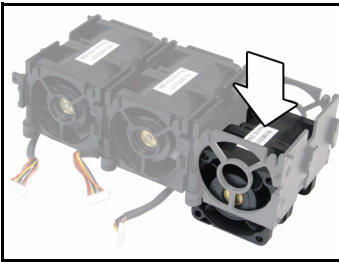
1. Remove the eight fan connectors from the motherboard.



2. Remove the fan unit from the chassis.



3. Remove the fan you want to replace in the direction of the arrow from the fan cradle.



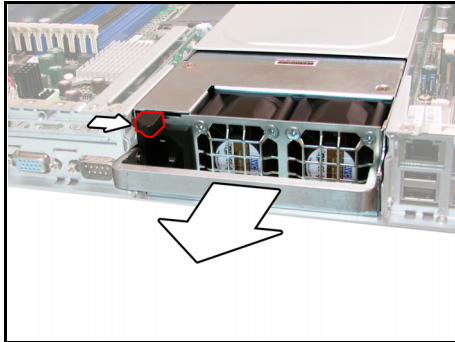
4. Replace a new fan into the fan cradle following the above steps in reverse.

3.8 Replacing the Power Supply

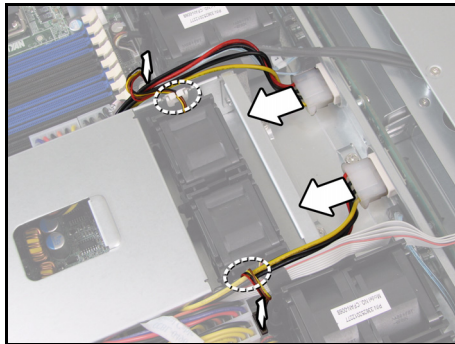
Follow these instructions to replace the power board and power supply in your GT28 (B2935) system.

3.8.1 Replacing the Power Board

1. Press the latch on the power supply front panel to the right as shown, and lift the handle on the power supply to pull out the power supply from the chassis.



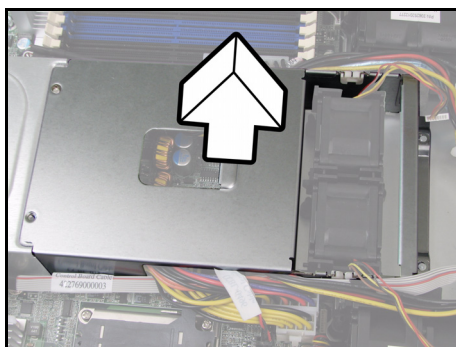
2. Disconnect the power and fan connectors as shown.



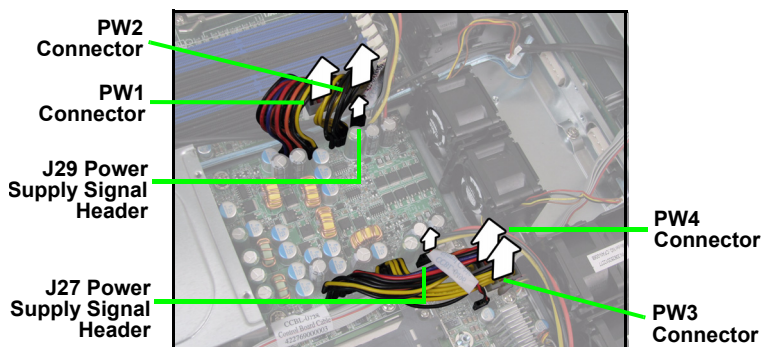
3. Remove the four screws securing the power board cover to the chassis as shown.



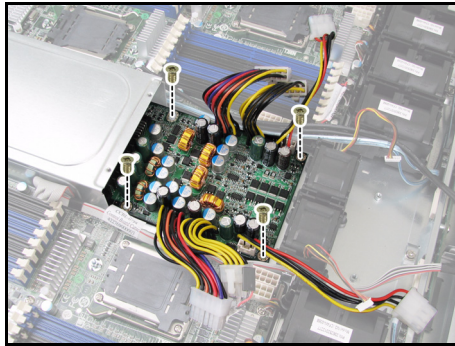
4. Lift up the power board cover as shown.



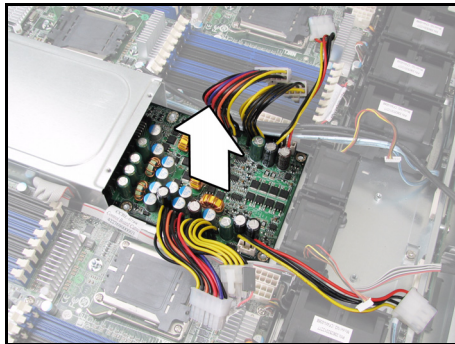
5. Disconnect all the power connectors from the power board.



6. Remove the four screws securing the power board to the chassis. Then lift off the power board free from the chassis.

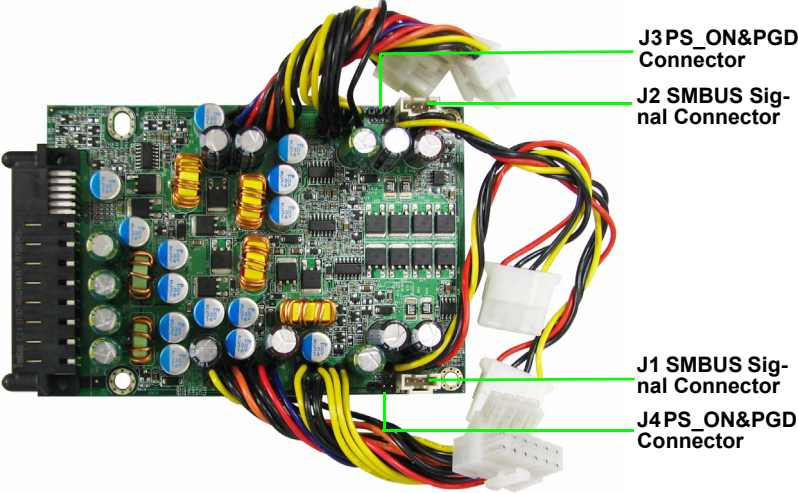


7. Lift up the power board as shown.



8. Replace a new power board into the chassis following the above steps in reverse.

3.8.2 M1028 Power Board Features



J3/J4 PS_ON&PGD Connector

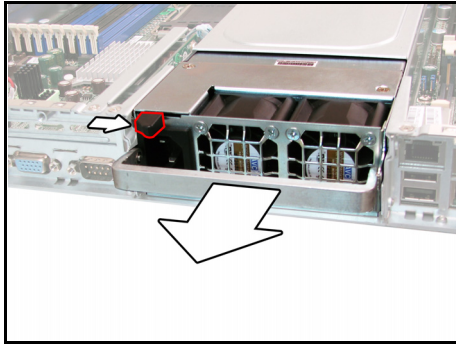
1	Key PIN
2	PS ON
3	Power Good

J1/J2 SMBUS Signal Connector

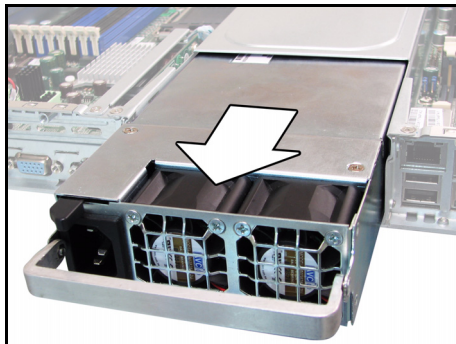
1	PS ON/FAULT
2	PCI_SMBUSCL
3	PCI_SMBUSDA
4	N/A

3.8.3 Replacing the Power Supply

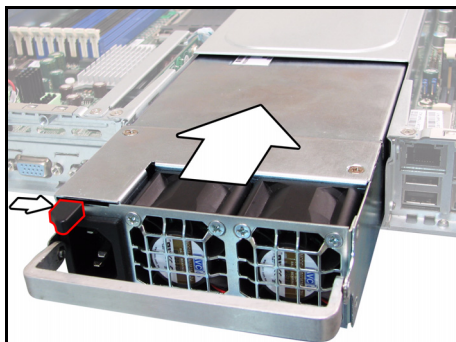
1. Press the latch on the power supply front panel to the right as shown, and lift the handle on the power supply.



2. Pull out the power supply from the chassis.



3. Place a new power supply and keep pressing the latch to the right until the power supply is fully inserted into the chassis.



Appendix I: BIOS Differences

The BIOS of B2935 is similar to the BIOS of S2935. There is only one menu different. You may refer to the attached motherboard manual for the complete BIOS information. The differences between B2935 and S2935 is on the “Advanced/Hardware Health Information” menu. See the following for the differences.

S2935 Advanced/Hardware Health Information

BIOS Setup Utility				
Main	Advanced	PCI/PnP Boot Security	Chipset	Exit
Hardware Monitor			Enables Hardware Health Monitoring Device.	
H/W Monitor Function		[Enabled]		
Auto FAN Control		[Disabled]		
FAN Fail LED Indicator		[Disabled]		
Hardware Health Event Monitoring				
▶ Voltage Monitoring				
CPU1 Temperature		:xx C/ xxx F		←→ Select Screen
CPU2 Temperature		:xx C/ xxx F		↑↓ Select Item
Ambient Temp (Near IB)		:xx C/ xxx F		+/- Change Option
Ambient Temp (Near MCP55)		:xx C/ xxx F		Tab Select Field
FAN1 (TACH1)		:xxxx RPM		F1 General Help
FAN2 (TACH3)		:xxxx RPM		F10 Save and Exit
FAN3 (TACH5)		:xxxx RPM		ESC Exit
FAN4 (TACH2)		:xxxx RPM		
FAN5 (TACH4)		:xxxx RPM		
FAN6 (TACH6)		:xxxx RPM		
PSUFAN1 (TACH7)		:xxxx RPM		
PSUFAN2 (TACH9)		:xxxx RPM		

B2935 Advanced/Hardware Health Information

BIOS Setup Utility						
Main	Advanced	PCI/PnP	Boot	Security	Chipset	Exit
Hardware Monitor					Enables Hardware Health Monitoring Device.	
H/W Monitor Function		[Enabled]				
Auto FAN Control		[Enabled]				
FAN Fail LED Indicator		[Disabled]				
Hardware Health Event Monitoring						
▶ Voltage Monitoring						
CPU1 Temperature		:xx C/ xxx F			← →	Select Screen
CPU2 Temperature		:xx C/ xxx F			↑ ↓	Select Item
Ambient Temp (Near IB)		:xx C/ xxx F			+/-	Change Option
Ambient Temp (Near MCP55)		:xx C/ xxx F			Tab	Select Field
System Fan1 Speed		:xxxx RPM			F1	General Help
System Fan2 Speed		:xxxx RPM			F10	Save and Exit
System Fan3 Speed		:xxxx RPM			ESC	Exit
System Fan4 Speed		:xxxx RPM				
System Fan5 Speed		:xxxx RPM				
System Fan6 Speed		:xxxx RPM				
PSUFan Speed		:xxxx RPM				

Table of Differences

	S2935	B2935
Auto FAN Control	Disabled	Enabled
Hardware Monitor Fan	FAN1 (TACH1) FAN2 (TACH3) FAN3 (TACH5) FAN4 (TACH2) FAN5 (TACH4) FAN6 (TACH6) PSUFAN1 (TACH7) PSUFAN2 (TACH9)	System FAN1 System FAN2 System FAN3 System FAN4 System FAN5 System FAN6 PSUFAN

Appendix II: Cable Connection Tables

NOTE: The Transport GT28 chassis supports two nodes.

SAS/SATA Cables

Table 1: Transport GT28-B2935

	M1228 SATA Backplane	Connect to	Motherboard
Node 1	J5 (SAS/SATA 1)	→	SATA 0
	J3 (SAS/SATA 2)	→	SATA 1
Node 2	J2 (SAS/SATA 1)	→	SATA 0
	J1 (SAS/SATA 2)	→	SATA 1

FAN Cables

Table 2: System Fan to Motherboard

System Fan	Connect to	Motherboard
System Fan 1	→	J31 Fan Connector
System Fan 2	→	J32 Fan Connector
System Fan 3	→	J33 Fan Connector
PSU FAN	→	J34/J30 Fan Connector

Power Supply Cables

Table 3: M1028 to Motherboard/ M1228

	M1028	Connect to	Motherboard/ M1228
Node 1	Fixed power cable	→	Motherboard PW3 8-pin connector PW4 12-pin connector J27 3-pin Power Supply Signal Header
	J4 Power Supply Signal Header		
	PW1 4-pin connector	→	M1228 PW1 4-pin connector
Node 2	Fixed power cable	→	Motherboard PW2 8-pin connector PW1 12-pin connector J29 3-pin Power Supply Signal Header
	J3 Power Supply Signal Header		
	PW2 4-pin connector	→	M1228 PW2 4-pin connector

The Other Cables

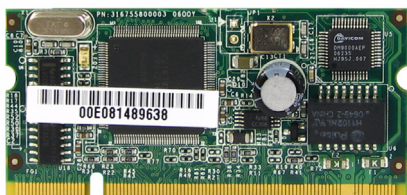
Table 4: M1003 Front Panel Control Board Related Cables

M1003	Connect to	Motherboard
J1 USB connector	→	J25 (USB2)
J2 connector	→	J24 connector

Appendix III: Installing an SMDC Card

This section provides information on installing optional M3295-2/ M3296 SMDC cards to your motherboard.

M3295-2

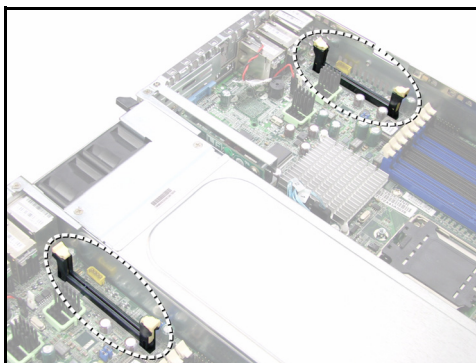


M3296

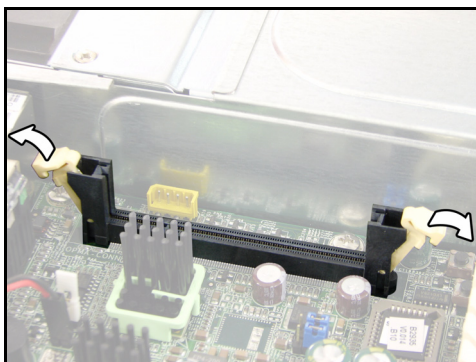


Follow these instructions to install an SMDC card for Transport GT28.

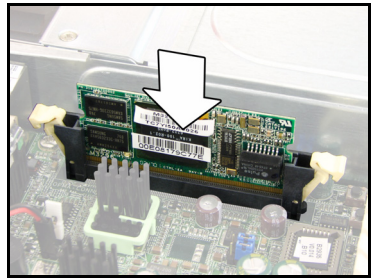
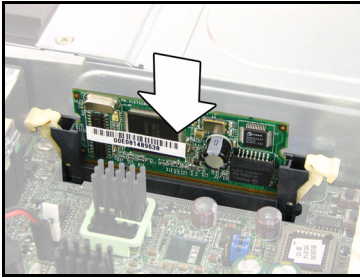
1. Locate the SO-DIMM connector on the motherboard.



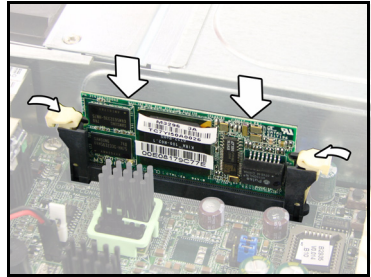
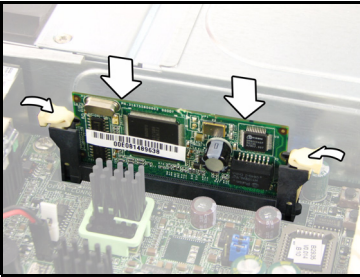
2. Press the SO-DIMM connector locking levers in the direction of the arrows as shown.



3.Insert the M3295-2/M3296 SMDC card into the connector as shown.



4.When inserted properly, the SO-DIMM connector locking levers lock automatically onto the indentations at the end of the SMDC card.



Appendix IV: FRU Parts Table

See TYAN's website for FRU Parts Table: www.tyan.com

Technical Support

If a problem arises with your system, you should first turn to your dealer for direct support. Your system has most likely been configured or designed by them and they should have the best idea of what hardware and software your system contains. Hence, they should be of the most assistance for you. Furthermore, if you purchased your system from a dealer near you, take the system to them directly to have it serviced instead of attempting to do so yourself (which can have expensive consequences).

If these options are not available for you then Tyan Computer Corporation can help. Besides designing innovative and quality products for over a decade, Tyan has continuously offered customers service beyond their expectations. Tyan's website (www.tyan.com) provides easy-to-access resources such as in-depth Linux Online Support sections with downloadable Linux drivers and comprehensive compatibility reports for chassis, memory and much more. With all these convenient resources just a few keystrokes away, users can easily find the latest software and operating system components to keep their systems running as powerful and productive as possible. Tyan also ranks high for its commitment to fast and friendly customer support through email. By offering plenty of options for users, Tyan serves multiple market segments with the industry's most competitive services to support them.

"Tyan's tech support is some of the most impressive we've seen, with great response time and exceptional organization in general"
- Anandtech.com

Please feel free to contact us directly for this service at techsupport@tyan.com

Help Resources:

1. See the beep codes section of this manual.
2. See the TYAN website for FAQ's, bulletins, driver updates, and other information: <http://www.tyan.com>

3. Contact your dealer for help BEFORE calling TYAN.
4. Check the TYAN user group: alt.comp.periphs.main-board.TYAN

Returning Merchandise for Service

During the warranty period, contact your distributor or system vendor FIRST for any product problems. This warranty only covers normal customer use and does not cover damages incurred during shipping or failure due to the alteration, misuse, abuse, or improper maintenance of products.

NOTE: A receipt or copy of your invoice marked with the date of purchase is required before any warranty service can be rendered. You may obtain service by calling the manufacturer for a Return Merchandise Authorization (RMA) number. The RMA number should be prominently displayed on the outside of the shipping carton and the package should be mailed prepaid. TYAN will pay to have the board shipped back to you.

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